APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,067	11/14/2001	Kuo-Chen Lin	TS00-251	7217

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EXAMINER
GOOD JOHNSON, MOTILEWA

ART UNIT	PAPER NUMBER
2672	5

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/993,067	LIN ET AL.
	Examiner	Art Unit	
	Motilewa A. Good-Johnson	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2004*.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1.   This office action is responsive to the following communications: Application,

filed 11/14/2001; IDS, paper #2, filed 01/31/2002; Amendment A, filed 03/11/2004.

This action is made final.

2.   Claims 1-20 are pending in this application. Claims 1, 8 and 12 are independent

claims. No claims have yet been amended.

3.   The present title of this application is "Method and Apparatus for Displaying

Production Data for Improved Manufacturing Decision Making" (as originally filed).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Guerlain et al., U.S. Patent Number 6,587,108 B1, "Multivariable Process Matrix Display

and Methods Regarding Same", class 345/440, 07/01/2003, filed 07/01/1999.

        As per independent claim 1, a data processing and display method . . .

comprising: uploading a first variable value . . . from a database; (Guerlain discloses a

memory unit 54, i.e. database, which receives historical data reduce to trend display,

col. 9, line 64 – col. 10, line 12) subtracting said first variable value . . . to obtain a first

variable variance; display a first variable variance bar above a stage axis on a graphical

display device . . . variance bar is non-filled if said first variable variance is positive . . . ;
(Guerlain discloses displaying a bar with a set of high and low process limit values for a
process variable and the bar being colored and hashed, col. 18, lines 43-63, figures 7A-
7G) uploading a second variable value for said manufacturing stage from said
database; (Guerlain discloses monitoring and manipulating one or more process
variables to control a process performed by a process plant, col. 7, lines 1-6)
subtracting said second variable value from a second target value . . . ; displaying a
second variable value bar below said stage axis on said graphical display . . . non-filled;
and displaying a second variable bar below said second variable value bar . . . if said
second variable variance is positive . . . filled. (Guerlain discloses displaying the first
upper end of a first bar representative of a hard high limit and a second end of a first bar
as having a hard low limit for the limit values of one or more process variables, col. 19,
line 64 – col. 19, line 15)

It would have been obvious to one of ordinary skill in the art at the time of the
invention to include subtraction to reflect the difference in the operator settings.

However, it is noted that Guerlain fails to disclose subtracting the first and
second variable to obtain first and second variable variances.

Guerlain discloses setting engineering hard and low limits that reflect the
difference in the operator settings, col. 17, lines 45-57.

It would have been obvious to one of ordinary skill in the art at the time of the
invention to include subtraction to reflect the difference in the operator settings.

With respect to dependent claim 2, first variable comprises a work-in-progress
(WIP).

However, it is noted that Guerlain fails to disclose the first variable as a work-in-progress.

Guerlain discloses the process variables are representative of plant components for performing a plant process or portion of a plant process, col. 7, lines 7-15.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a variable as a work-in-progress because work-in-progress are variables representative of a semiconductor plant operation.

With respect to dependent claim 3, second variable comprises production moves.

However, it is noted that Guerlain fails to disclose second variable as production moves.

Guerlain discloses one or more variables used to represent one or more plant components.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize production moves fore representation of a semiconductor plant operation.

With respect to dependent claim 4, filled bars comprise any of the group of: color filled, texture filled, and gray-scale filled. (Guerlain discloses dashed lines, or color, col. 20, lines 30-41 may represent bars, see also figures 7A-7G)

With respect to dependent claim 5, manufacturing process comprises integrated circuit manufacturing.

However it is noted that Guerlain fails to disclose integrated circuit manufacturing.

Guerlain discloses process controls are used in manufacturing industries, col. 1, lines 37-40.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include integrated circuit manufacturing because integrated circuit manufacturing use process controls.

With respect to dependent claim 6, displaying said first variable, said first variable variance, said second variable, and said second variable variance for said stage as text data on a graphical display device. (Guerlain discloses displaying the first upper end of a first bar representative of a hard high limit and a second end of a first bar as having a hard low limit and displaying texture field for the limit values of the process variable, col. 19, line 64 – col. 19, line 15)

With respect to dependent claim 7, display a sub-category bar above said first variance bar . . . comprises an amount of said first variable within a defined sub-category . . . filled. (Guerlain discloses the hashed regions, i.e. filled region, representative of the upper high limit are used to graphical display a target optimization value, col. 19, lines 16-32)

As per independent claim 8 and dependent claims 9-11, they are rejected based upon similar rational as above claims 5, 4, 6 and 7 respectively.

As per independent claim 12 and dependent claim 13, they are rejected based upon similar rational as above independent claim 1. Guerlain further discloses a CPU, figure 1, element 52 (means of uploading from a database); a memory, figure 1,

element 54 (means of storing); data analysis module, figure 1, element 72 (means for

calculating) and a display, figure 1, element 58 (a graphical display means).

With respect to dependent claims 14-18 and 20, they are rejected based upon

similar rational as above dependent claims 2-7 respectively.

With respect to dependent claim 19, text data is displayed in response to a user

input device. (Guerlain discloses users can make changes to the limits by the textual

fields, col. 19, lines 52-58)

Response to Arguments

6.   Applicant's arguments filed 03/11/2004 have been fully considered but they are

not persuasive.

Applicant argues that Guerlain is only concern with graphical depiction of data

using bars, only uses bars to depict hard engineering or operating limits, bars fails to

depict the actual processing data, actual data using an arrow directed to a vertical

scale, not by using bars, variance data is not display and no filled/non-filled bar chart

used, and displaying a variable above and a second or third variable below a stage in a

bar chart is not disclosed.

Guerlain discloses control of a plurality of process variables including controlled

variables, a relationship between one or more controlled variables displayed along a

first axis and one or more controlled variables displayed along a second axis. Guerlain

further discloses the graphical device is representative of a state of the process variable, col. 5, lines 1-15.

Guerlain discloses that any suitable components and code capable of carrying out the techniques may be employed in the graphical user interface display screen, col. 10, lines 13-23. Examiner notes that Guerlain discloses the bar as being representative of the manipulated variables, it would have been obvious to one of ordinary skill in the art at the time of the invention that Guerlain allows for any suitable components for carrying out the technique and that a bar graph constitutes a suitable component and may be implemented for the controlled variables as well as the manipulated variables. Therefore it is the Examiner's position that the controlled data, i.e. actual data, may be depicted using the bar graph disclosed in Guerlain.

Guerlain discloses displaying one or more columns in a particular color representative of a characteristic of the process variable, col. 6, lines 1-4. Therefore, it is the Examiner's interpretation that the data representing the process variable may be displayed in a filled/non-filled display.

Guerlain discloses the matrix array of information of the controlled variables displayed along a first axis and one or more manipulated variables displayed along a second axis. Guerlain further discloses each graphical device displayed in proximity to a process variable of the controlled variable, col. 5, lines 45-57. Therefore, it is inherent that the controlled variables may extend along a first and second axis, i.e. X, -X axis, providing variables below the bar graph for high and low process limit values.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Motilewa A. Good-Johnson whose telephone number is

(703) 305-3939. The examiner can normally be reached on Monday - Friday 8:30 AM -

5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone number for

the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 306-

0377.

Motilewa A. Good-Johnson
Examiner
Art Unit 2672

mgj

MICHAEL RAZAVI
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TECHNOLOGY CENTER 2600